

INSTALLATION INSTRUCTIONS for HEALY SYSTEMS, INC. CLEAN AIR SEPARATOR

The Model 9961 or 9961H, Healy Systems Clean Air Separator (CAS) consists of a 400 gallon steel vapor processor vessel that contains a fuel resistant bladder to hold excess gasoline vapors that may develop in gasoline storage tanks during idle periods of gasoline dispensing facility operation. Models and Drawings with a “H” suffix apply to horizontal CAS installations and those without a “H” suffix apply to vertical CAS installations. The CAS assembly weighs approximately 800 pounds which makes it necessary to have a power assisted lifting device available at the installation site to remove the CAS from the transportation vehicle and place it on the required concrete pad (see drawing 9900-9945 or 9900-9945H). The pad (level within 1/8”/foot) is located within 100 feet to the gasoline storage tank vent lines. The pad is a requirement of this installation. **DO NOT PLACE THE CLEAN AIR SEPARATOR DIRECTLY ON THE GROUND OR ASPHALT SURFACE.** NOTICE: The installer is responsible to ensure that the installation meets the latest edition requirements of NFPA 30A, Chapter 10. No electrical connections are required. The CAS securement method shown in drawing 9900-9945 or 9900-9945H shall be approved by the local authority having jurisdiction with respect to wind and seismic loading. Installer shall not loosen, rotate or remove factory installed fittings or flange as this may damage factory seals and void warranty.

In addition to the vapor processor vessel, there is a hardware kit that contains the following:

- 4 Locking 1” NPT Ball Valves
- 4 Pad locks (keyed alike)
- 1 Breather Assembly, Healy Model 9948
- 1 Float Check Valve Assembly, Model 9466G

Reference the appropriate Healy Systems installation drawing (9900-9942, 9900-9942H, 9900-9971, 9900-9971H, 9900-9972, 9900-9972H, 9900-9973 or 9900-9973H of this manual) for placement of the above parts for the vent stack configuration required by the local Authority Having Jurisdiction (AHJ) for the Underground Storage Tank (UST) system. **A flexible connection between the Clean Air Separator and the vent line(s) is allowable if required by the local Authority Having Jurisdiction (AHJ) to meet seismic requirements. Should the flex connection be installed such that it is not supported, the slope of the flex connection shall be greater than the 1/8”/foot slope required for the rest of the one inch galvanized piping.** The local contractor is responsible to provide all necessary, galvanized piping, non-hardening, UL classified pipe joint compound and plumbing fittings. Additional Pressure/Vacuum (P/V) vent valves to complete installation are not included in the hardware kit. Healy is not responsible for the warranty of any other P/V vent valve purchased to complete installation.

The CAS arrives at the site assembled and tested. All plumbing shall be done using 1” galvanized steel pipe (Schedule 40) and approved nipples, as called out in the installation drawing appropriate for the site installation. Mounting hardware shall be galvanized or stainless steel. Careful attention must be paid to the installation drawing appropriate for the site installation to assure proper operation of the bladder system. Do not inflate the bladder assembly after installation.

It is important that the CAS be secured to the concrete pad as shown in drawing 9900-9945 or 9900-9945H of this manual to prevent any unintentional repositioning of the CAS as the connecting plumbing to the vent system is accomplished.

Franklin Fueling Systems
3760 Marsh Road
Madison, Wisconsin 53718 USA
ARB Approved Installation, Operation and Maintenance Manual

Website: <http://www.franklinfueling.com>
Email: sales@franklinfueling.com
Telephone: 800-225-9787
Fax: 608-838-6433



OPERATION AND PURGING

NORMAL OPERATION:

- There are four ball valves on the CAS. Each ball valve is to be installed so as to allow opening and closing with nothing obstructing the full range (90°) of movement. In normal operation, only the valve (A) at the top of the CAS shall be open – the other three valves (B, C and D) shall be closed. All four valves shall be locked in the above positions. The two plugs (E and F) should be installed using a non-hardening, UL classified pipe joint compound and tightened to 60 ft-lbs.

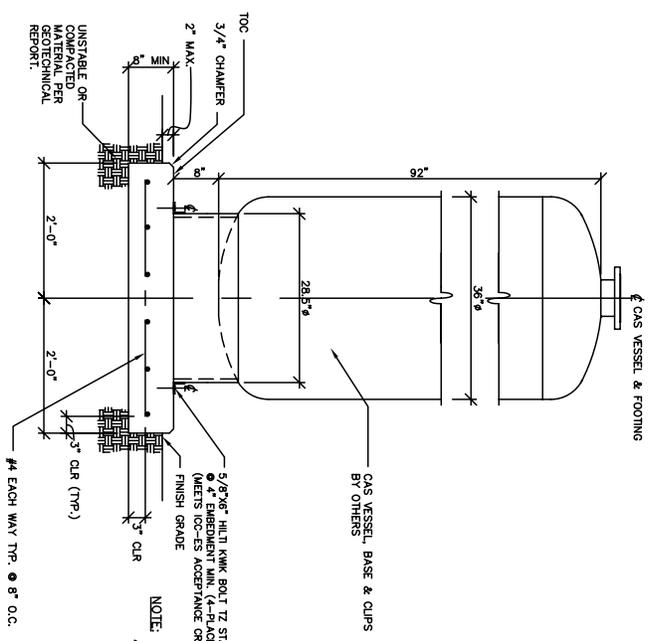
DRAINING THE BLADDER:

- Any liquid coming over from the vent system would have collected above the valve (A) in the riser pipe before going into the bladder. An inspection of the need to drain the bladder is easily made by removing the plug (E) at the tee on the bottom plumbing of the CAS. Before removing this plug, open the valve (B) above the tee to release any liquid into the piping below. Wait approximately 30 seconds and then close the valve (B). Now, remove the plug (E) at the tee on the bottom plumbing of the CAS – be sure to have a container suitable for gasoline available to catch fluid. If liquid in excess of 16 ounces (473 ml) drains out, the bladder should also be drained.
- Should it be necessary to drain the bladder:
 1. Close the upper ball valve (A) (usually open) leading to the gasoline storage tank vent lines.
 2. Open the valve (C) that goes to the internal syphon tube. Be sure the other three ball valves (A, B and D) that connect to the vent lines and CAS are closed.
 3. Remove the plug (E) from the bottom tee and connect an explosion proof evacuation pump capable of handling liquid. Have a liquid tight, container suitable for gasoline positioned to receive any fluid that may exit the system and start the pump. If no liquid returns within 30 seconds, the bladder is dry – discontinue pumping, remove the pump, replace the plug (E) and return the ball valves to their normal, locked, positions.

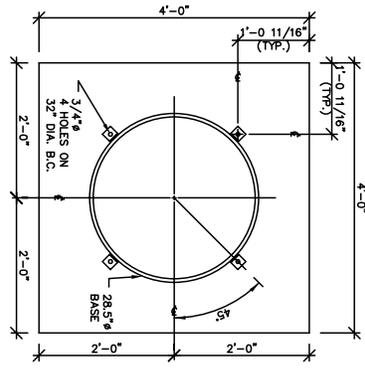
DRAINING THE CAS:

- Should it be necessary to drain the CAS (between the bladder and steel wall):
 1. Close the ball valve at the top (A) of the CAS and also the two valves (B and C) on the vertical risers.
 2. Remove the plug (E) in the bottom tee and place a metal container below the pipe opening.
 3. Carefully open the ball valve (D) at the bottom of the CAS – observe that the container that is being drained into does not overflow – empty container as required until fluid no longer comes from the pipe when the valve is open.
 4. Close the ball valve (D) and replace the plug (E) into the tee.
 5. Return all ball valves to their normal locked positions.

DRW NO: 9900-9945



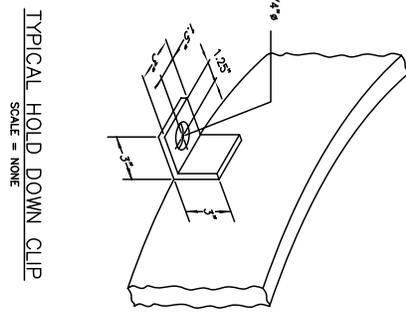
SECTION @ CAS SLAB
SCALE = 3/4" = 1'-0"



BASE PLAN
SCALE = 3/4" = 1'-0"

NOTE: WHERE ICC-ES ACCEPTANCE CRITERIA IS NOT REQUIRED, 5/8" X 6" HILTI KWIK BOLT TZ 3 @ 4" EMBEDMENT MIN. CAN BE USED (PER ESR-1395 REPORT, ISSUED 09/01/04).

NOTE: WHERE ICC-ES ACCEPTANCE CRITERIA PER ESR-1917 REPORT, 5/8" X 6" HILTI KWIK BOLT TZ STAINLESS STEEL (MEETS ICC-ES ACCEPTANCE CRITERIA PER ESR-1917 REPORT) CAN BE USED.



TYPICAL HOLD DOWN CLIP
SCALE = NONE

CRITERIA
SOIL BEARING 1000 psf
BASIC WIND SPEED 100mph
SEISMIC $S_a = 2g$
 $S_m = 1g$
MIN. CONCRETE COMP STRENGTH, $f'_c = 2500$ psi
MIN. REINF. YIELD STRENGTH, $f_y = 40000$ psi

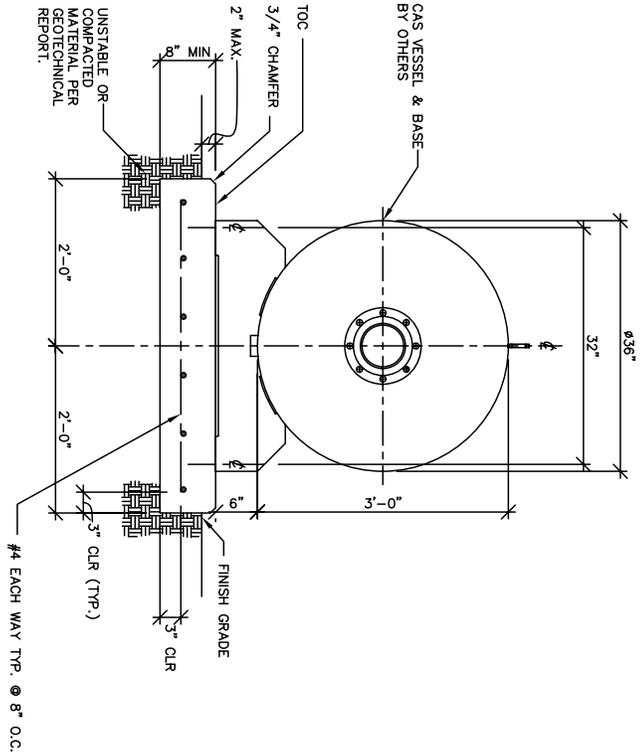
The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and is intended for use only in the drawing for the information disclosed. This information may be reproduced or transferred to other documents, or used or disclosed to others for any purpose without the written consent of Franklin Fueling Systems, Inc. This drawing must be returned to Franklin Fueling Systems upon request.

MATERIAL:	DO NOT SCALE DRAWING	XX ± .02
	STANDARD INCH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	XXX ± .005
	SPECIAL DIST:	ANGULAR ± 1/2°

TITLE:	CLEAN AIR SEPARATOR MOUNTING SLAB DETAILS		
DRAWN:	DATE:	DRW NO:	SUFFIX:
JWH	07/31/02	9900-9945	
APPROV:	DATE:	SCALE:	SHEET 1 OF 1
		1/8	



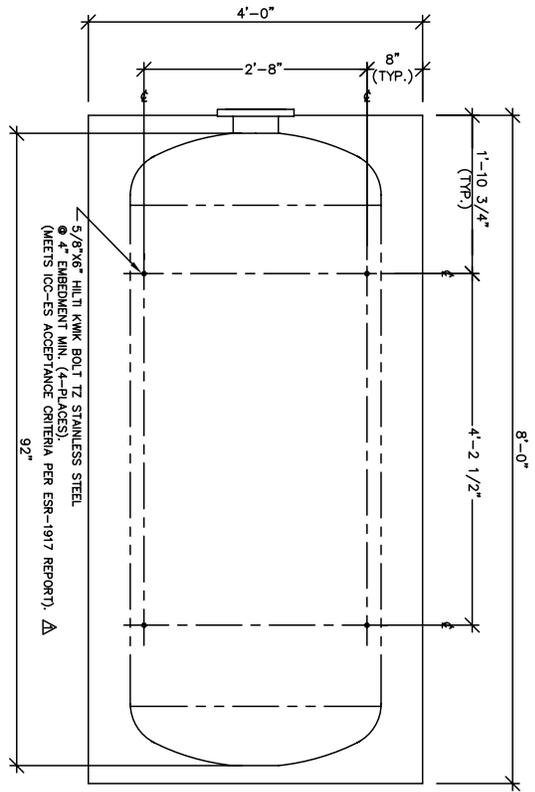
REV	DESCRIPTION	ECN NO	BY	DATE
7	ADDED GAS DIMENSIONS, REVERSED CRITERIA LIST	-	TF	01/02/08
6	K&B-TZ SS WAS K&B, ESR-1917 WAS ESR-1395, ADDED NOTE 1	-	TF	12/21/07



SECTION @ CAS SLAB

CRITERIA
 SOIL BEARING: 1000 psf
 BASIC WIND SPEED: 100mph
 SEISMIC $S_s=29$
 $S_d=19$
 MIN. CONCRETE COMP. STRENGTH, $f'_c = 2500$ psi
 MIN. REINF. YIELD STRENGTH, $f_y = 40000$ psi

The information disclosed hereon includes proprietary rights of Franklin Fueling Systems, Inc. Neither this drawing nor the information disclosed thereon may be reproduced or transferred to other documents, or used or disclosed to others for any purpose, except as specifically authorized in writing by Franklin Fueling Systems. This drawing must be returned to Franklin Fueling Systems upon request.



BASE PLAN

NOTE:
 WHERE ICC-ES ACCEPTANCE CRITERIA IS NOT REQUIRED, 5/8" x 6" HILT HIKK BOLT 3 @ 4" EMBEDMENT MIN. CAN BE USED (PER ESR-1385 REPORT, ISSUED 09/01/04).

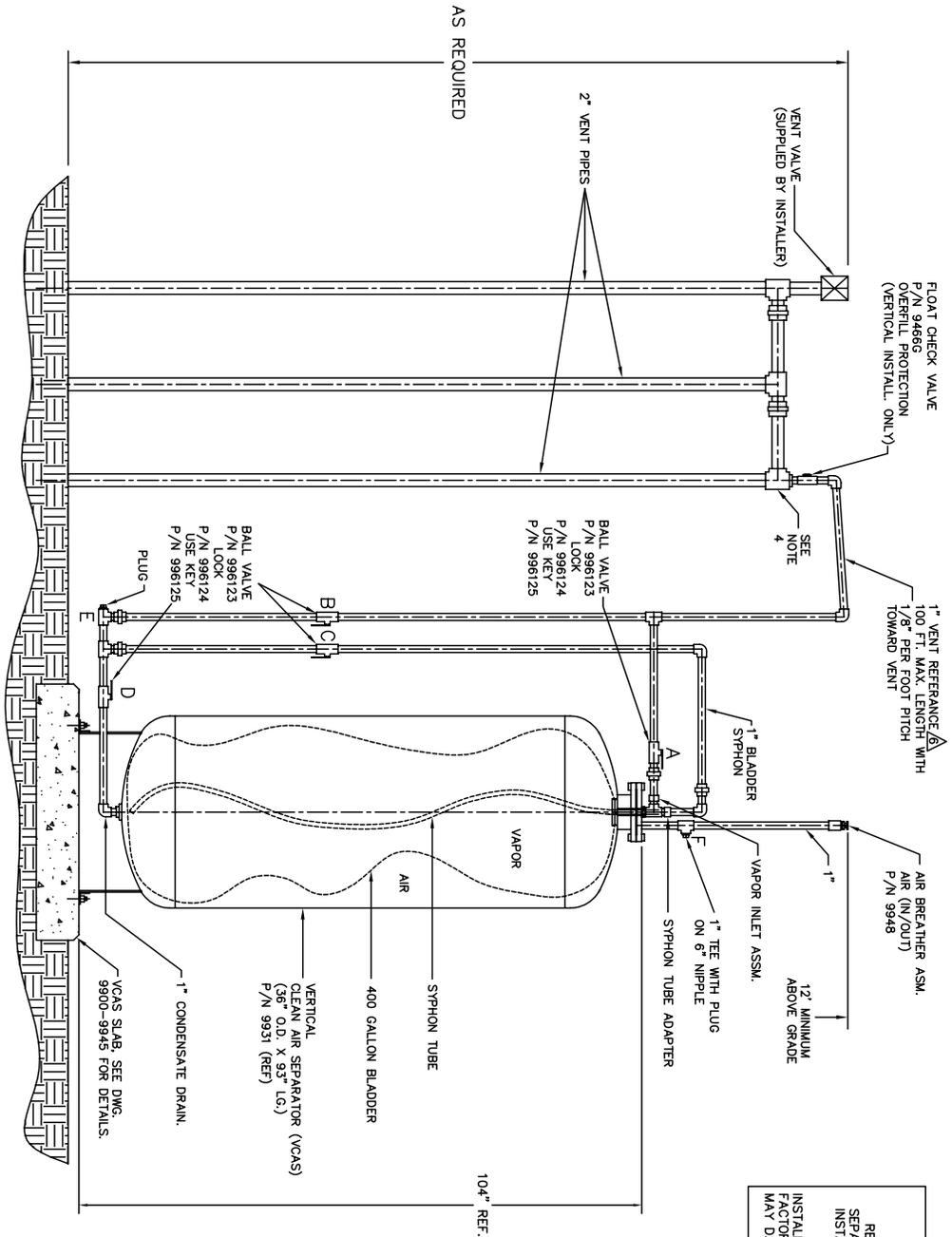
DRW No: 9900-9945H

MATERIAL:	
DO NOT SCALE DRAWING	.XX ± .02
STANDARD INCH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	.XXX ± .005
SPECIAL DIST:	ANGULAR ± 1/2°

TITLE:		CLEAN AIR SEPARATOR HORIZONTAL MOUNTING SLAB DETAILS	
DRAWN:	DATE:	DRW NO:	SUFFIX:
TF	05/22/07	9900-9945	H
APPRVL:	DATE:	SCALE:	SHEET
MDB	06/05/07	3/4" = 1"	1 OF 1



REV	DESCRIPTION	ECN NO	BY	DATE
5	ADDED GAS DIMENSIONS, REVISED CRITERIA LIST	-	TF	01/02/08
4	KB-TZ SS WAS KB3, ESR-1917 WAS ESR-1385, ADDED NOTE 1	-	MB	12/21/07



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
 - 2 - PASSIVE PRESSURE CONTROL-NO ELECTRICAL PARTS REQUIRED.
 - 3 - AIR BREATHER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE.
 - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
 - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AAH) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE
DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF PHYSICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. 3D CAD INSTALLATION SHALL BE SLIGHTLY DIFFERENT FROM THE REPRESENTATION SHOWN.
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DRW NO: 9900-9942

The information disclosed herein includes proprietary rights of Franklin Fuelling Systems, Inc. and is intended for use only for the specific project identified herein. It is not to be used, copied, or disseminated in any form without the written consent of Franklin Fuelling Systems, Inc. This drawing must be used in accordance with the Franklin Fuelling Systems upon request.

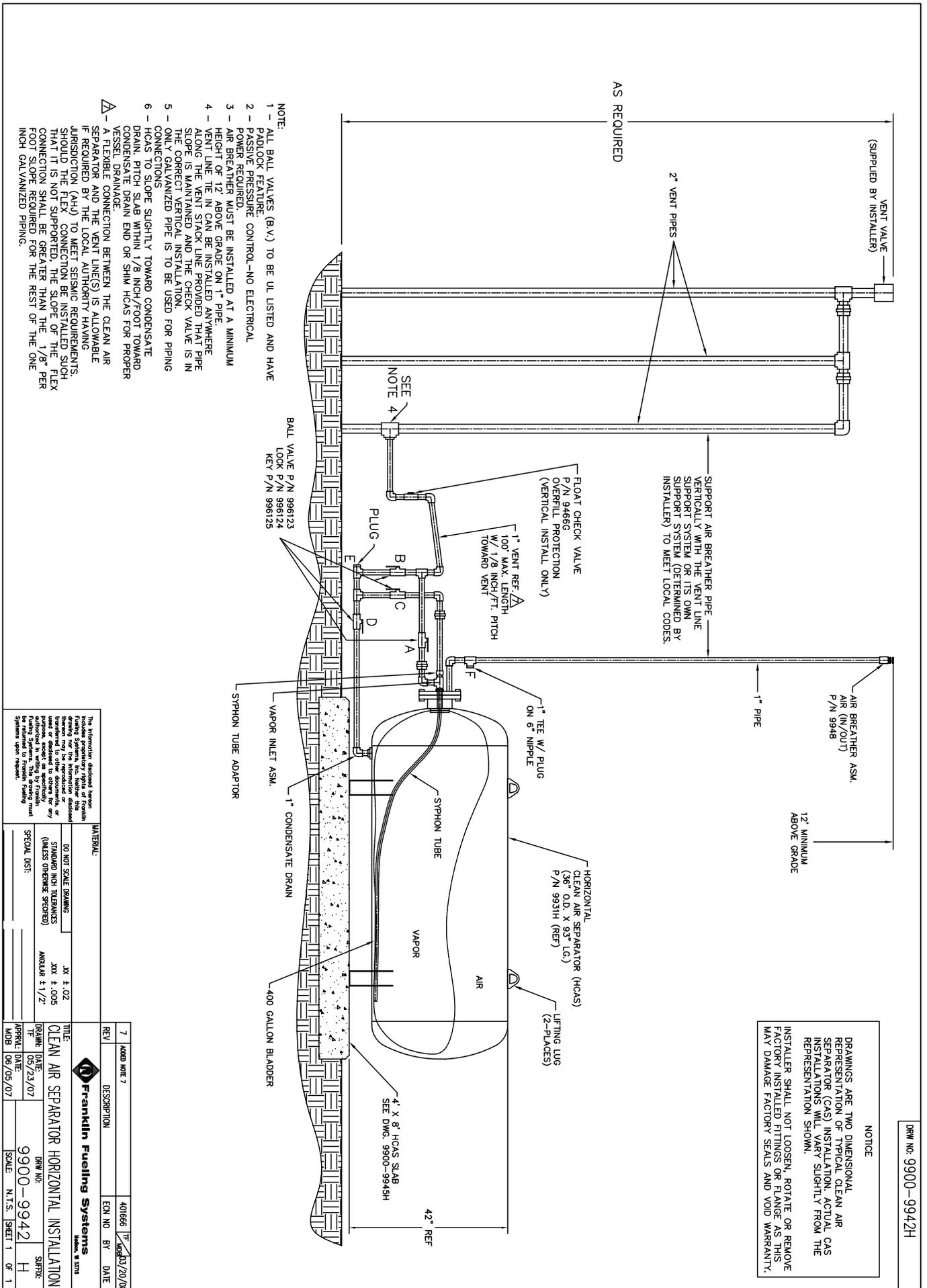
MATERIAL:	DO NOT SCALE DRAWING	XX ± 0.02
	STANDARD INDUSTRIAL PRACTICES (MESH OR FINISH SPECIFIED)	.000 ± .0005
SPECIAL DWT:		ANGULAR ± 1/2"

REV	DESCRIPTION	EON NO	BY	DATE
15	ADDED NOTE 6	401666	TF	06/13/20/08

TITLE: **CLEAN AIR SEPARATOR VERTICAL INSTALLATION**

DATE: 05/14/02
DRAWN: JWH
APPVAL: JWH
MOB: 06/05/07

FRANKLIN Fuelling Systems
9900-9942
SCALE: N.T.S. SHEET 1 OF 1



DRW NO: 9900-9942H

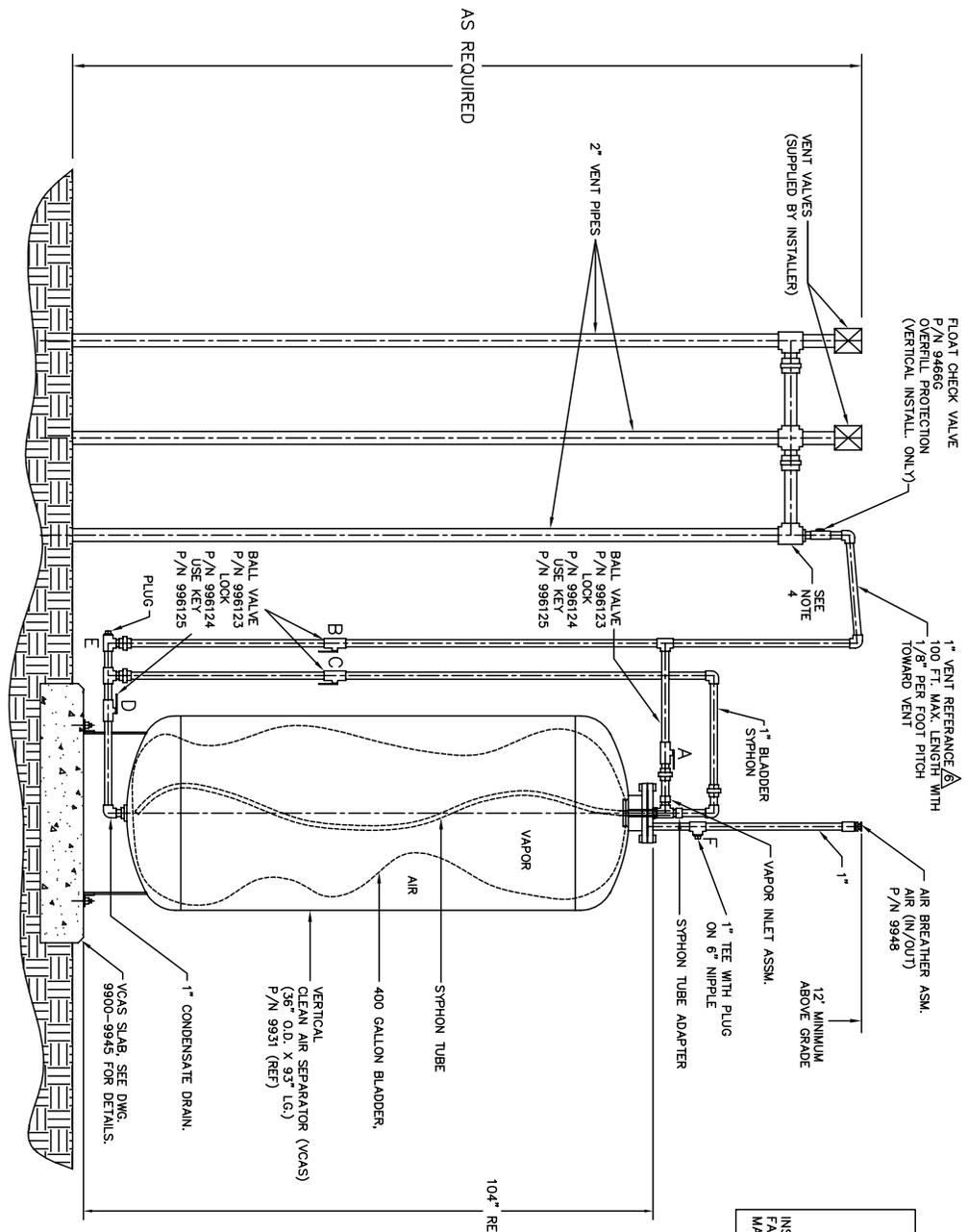
NOTICE
 DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.
 INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

- NOTE:**
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE CONTROL-NO ELECTRICAL.
 - 2 - PASSIVE PRESSURE CONTROL-NO ELECTRICAL.
 - 3 - AIR BREATHER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE ON 1" PIPE.
 - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
 - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
 - 6 - HOAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8" INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HOAS FOR PROPER VESSEL DRAINAGE.
- ▲ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and is intended for use only by the recipient of this information. It is not to be reproduced, distributed, or used in any manner without the prior written consent of Franklin Fueling Systems, Inc. This drawing must be used in accordance with the Franklin Fueling Systems Inc. Standard Operating Procedures.

MATERIAL:	
DO NOT SCALE DRAWING	XX ± .02
STANDARD TECH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	XXX ± .0005
SPECIAL DIST:	ANGULAR ± 1/2°

7	ADD NOTE 7	401666	15/03/20/08
REV	DESCRIPTION	EON NO	BY DATE
Franklin Fueling Systems Model # 5219			
TITLE:		DRW NO:	SHEET:
CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION		9900-9942	H
DATE:	APPROVAL DATE:	SCALE:	N.T.S.
05/23/07	06/05/07	9900-9942	SHEET 1 OF 1



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
 - 2 - PASSIVE PRESSURE CONTROL--NO ELECTRICAL POWER REQUIRED.
 - 3 - AIR BREAKER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12 ABOVE GRADE.
 - 4 - VENT LINE THE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT TECHNICAL INSTALLATION.
 - 5 - ONE STANDARDIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (A.H.J.) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

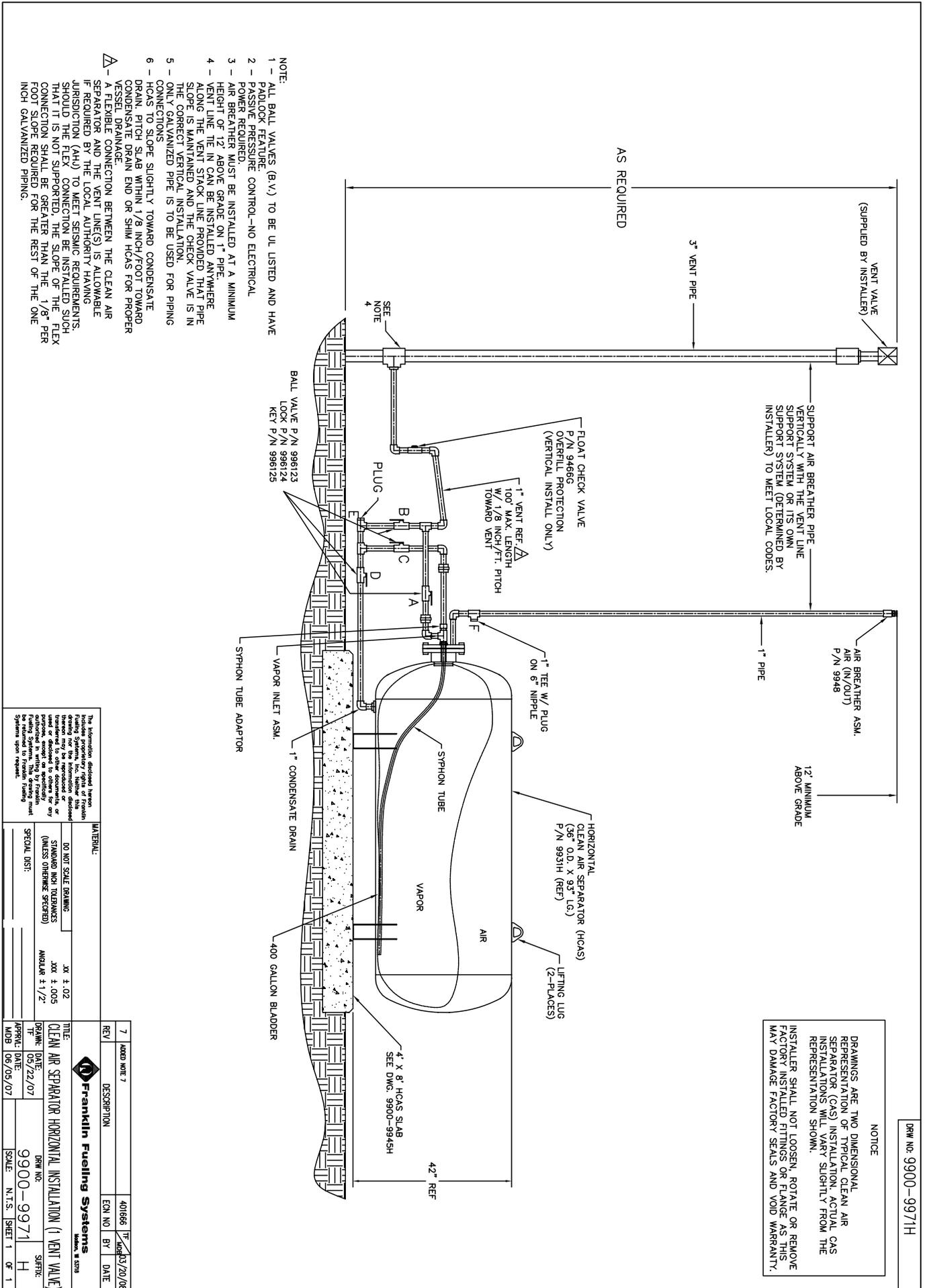
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE ASSEMBLY. FACTORY FACTORY SEALS AND VOID WARRANTY.

The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and its subsidiaries. This information is intended for use only for the purposes stated herein and is not to be used or disclosed to others for any other purpose without the written consent of Franklin Fueling Systems, Inc. This drawing must be used in accordance with the Franklin Fueling Systems upon request.

MATERIAL:	DO NOT SCALE DRAWING	XX ± 0.02
	STANDARD DIMENSIONS (UNLESS OTHERWISE SPECIFIED)	.000 ± .005
SPECIAL DWT:		ANGULAR ± 1/2"

REV	8	ADDED NOTE 6	401666	16	06/23/20/08
REV		DESCRIPTION	EON NO	BT	DATE
TITLE: CLEAN AIR SEPARATOR VERTICAL INSTALLATION (2 VENT)					
DRAWN	JWH	DATE	05/14/02	DRW NO:	9900-9972
APPROVAL	JWH	DATE	05/05/07	ACAD HWY SCALE	N.T.S. SHEET 1 OF 1

DRW NO: 9900-9972



NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

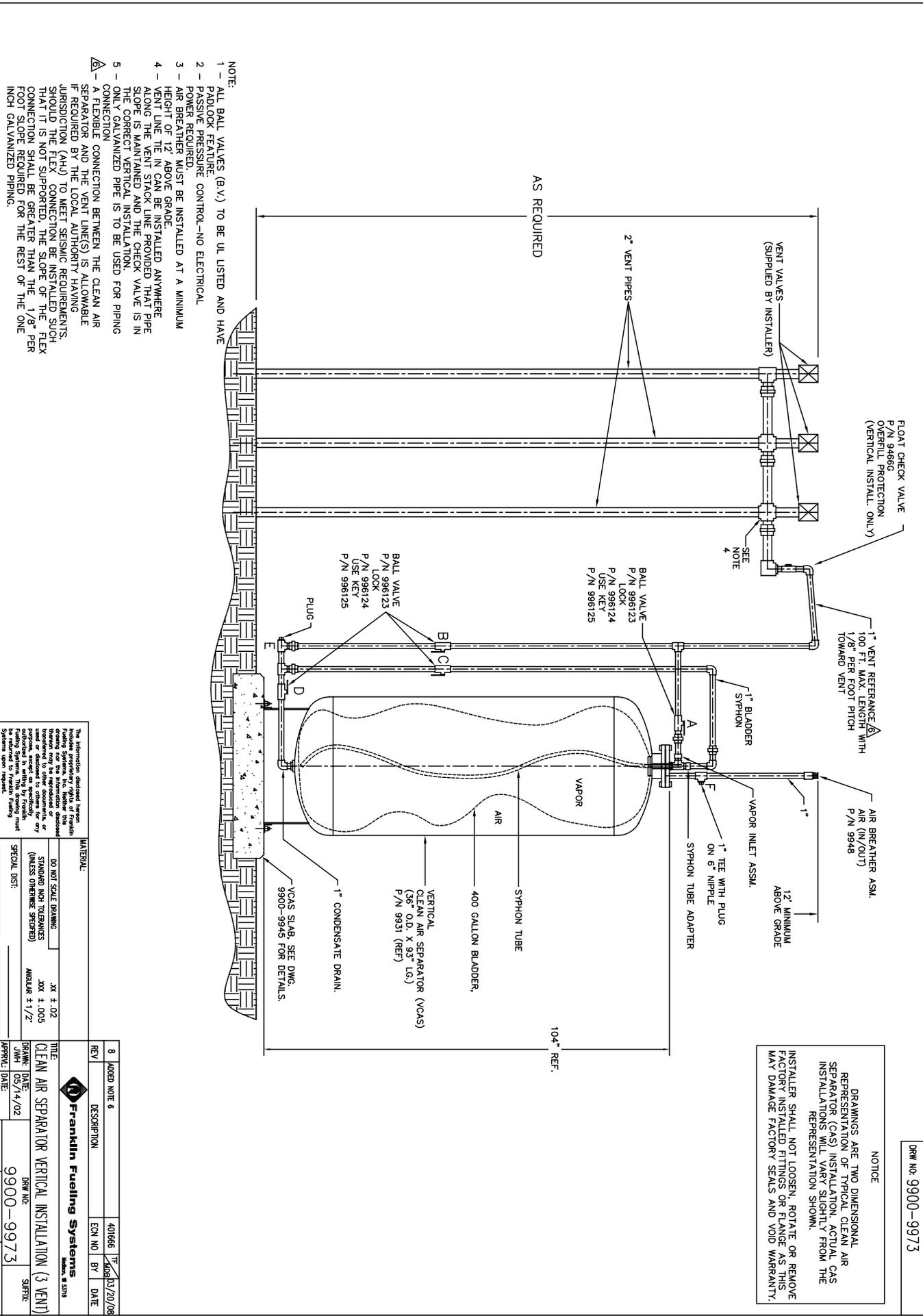
INSTALLER SHALL NOT LOOSEN, ROTATE, OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGES AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DWG NO: 9900-9971H

The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and is intended for use only by the recipient. It is not to be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Franklin Fueling Systems, Inc. This drawing must be used in accordance with the Franklin Fueling Systems, Inc. Safety Systems upon request.

MATERIAL:	
DO NOT SCALE DRAWING	XX ± .02
STANDARD RICH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	.0005 ± .0005
SPECIAL DIST:	ANGULAR ± 1/2°

7	REVISED	NOV 7	401666	TR	03/20/08
DESCRIPTION	EON NO	BY	DATE		
Franklin Fueling Systems Model B 521H					
TITLE:	DRAWN NO:	DATE:	DRN NO:	SHEET:	OF
CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (1 VENT VALVE)	9900-9971	05/22/07	9900-9971	H	1
APPROVAL DATE:	SCALE:	N.T.S.	SHEET:	1	OF 1
06/05/07					



- NOTE:
- 1 – ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
 - 2 – PASSIVE PRESSURE CONTROL—NO ELECTRICAL POWER REQUIRED.
 - 3 – AIR BREAKER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE.
 - 4 – VENT LINE THE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
 - 5 – ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (A.H.) TO MEET SEISMIC REQUIREMENTS. THE SEISMIC REQUIREMENTS SHALL BE CHECKED THAT IT IS NOT SUPPORTED THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

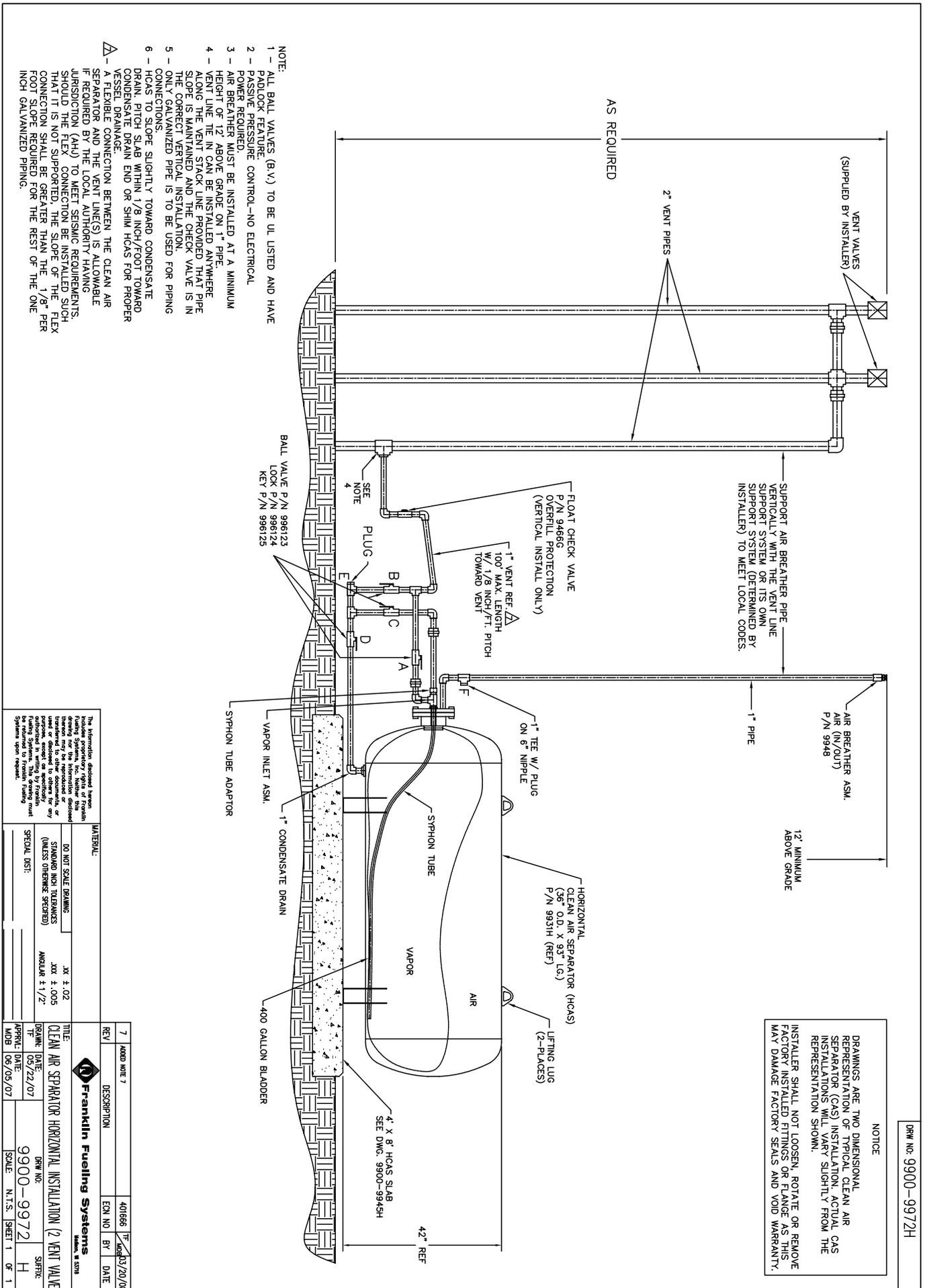
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DRW NO: 9900-9973

The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and its subsidiaries. This information is intended for use only for the specific project identified herein. It is not to be used, copied, or disseminated in any form without the written consent of Franklin Fueling Systems, Inc. This drawing must be used in accordance with the Franklin Fueling Systems Inc. specifications.

MATERIAL:	DO NOT SCALE DRAWING	XX ± 0.02
	STANDARD AND FINISHES (SEE SPECIFICATIONS)	.000 ± .0005
	(UNLESS OTHERWISE SPECIFIED)	ANGLES ± 1/2°
SPECIAL DWT:		

REV	8	ADDED NOTE 6	401666	16	06/23/20/08
REV		DESCRIPTION	EON NO	BY	DATE
TITLE: CLEAN AIR SEPARATOR VERTICAL INSTALLATION (3 VENT)					
DRW	DATE	DRW NO.	SHEET		
JWH	05/14/02	9900-9973	1 OF 1		
APPR	DATE	ACAD HLY	SCALE	N.T.S.	SHEET 1 OF 1
ADB	06/05/07				



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
 - 2 - PASSIVE PRESSURE CONTROL-NO ELECTRICAL POWER REQUIRED.
 - 3 - AIR BREATHER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE ON 1" PIPE.
 - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
 - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
 - 6 - HCAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8 INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HCAS FOR PROPER VESSEL DRAINAGE.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

The information disclosed herein includes proprietary rights of Franklin Fuelling Systems, Inc. and is intended for use only by the recipient of this information. It is not to be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Franklin Fuelling Systems, Inc. This drawing must be used in accordance with the Franklin Fuelling Systems, Inc. drawing systems upon request.

MATERIAL:	
DO NOT SCALE DIMENSIONS	XX ± .02
STANDARD RICH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	.XXX ± .0005
SPECIAL DWT:	ANGULAR ± 1/2"

REV	DESCRIPTION	EON NO	BY	DATE
7	REVISION 7	401666	TF	03/20/08

TITLE:	CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (2 VENT VALVE)
DRAWN:	TF
DATE:	05/22/07
APPVAL:	06/05/07
DRW NO:	9900-9972
SHEET:	H
SCALE:	N.T.S.
SHEET:	1 OF 1

Franklin Fuelling Systems
 Model B 5218

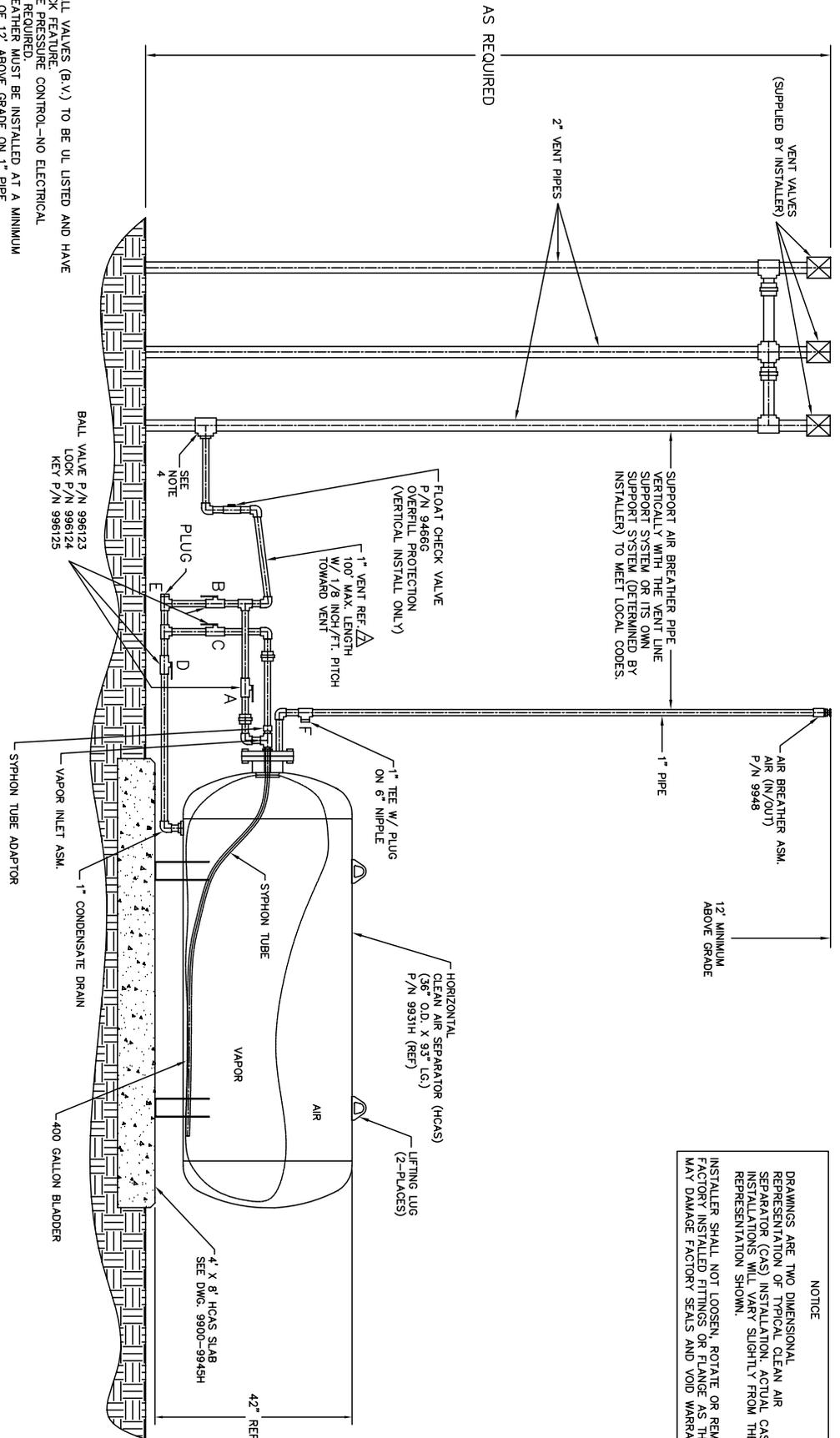
NOTICE
 DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.
 INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DRW NO: 9900-9972H

DRW NO: 9900-9973H

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.
 INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PULL LOCK FEATURE.
 - 2 - PASSIVE PRESSURE CONTROL—NO ELECTRICAL POWER REQUIRED.
 - 3 - AIR BREAKERS MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE ON 1" PIPE.
 - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
 - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
 - 6 - HCAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8 INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HCAS FOR PROPER VESSEL DRAINAGE.
- ▲ A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (A.H.J.) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

The information disclosed herein includes proprietary rights of Franklin Fueling Systems, Inc. and is intended for use only for the reproduction or use of the information disclosed herein for the purpose of the use or disclosure to others for any other purpose without the written consent of Franklin Fueling Systems, Inc. This drawing must Systems upon request.

MATERIAL:	DO NOT SCALE DRAWING	XX ± .02
	STANDARD RICH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	.0005 ± .0005
SPECIAL DIST:		ANGULAR ± 1/2°

REV	7	ADDED NOTE 7	401666	TR	05/22/07
DESCRIPTION			EON NO	BY	DATE
Franklin Fueling Systems Model # 5219					
TITLE:	CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (3 VENT VALVE)				
DRAWN:	TF	DATE:	05/22/07	DRW NO:	9900-9973
APPROVAL:	MOB	DATE:	06/05/07	SHEET:	H
				SCALE:	N.T.S.
				SHEET:	1 OF 1